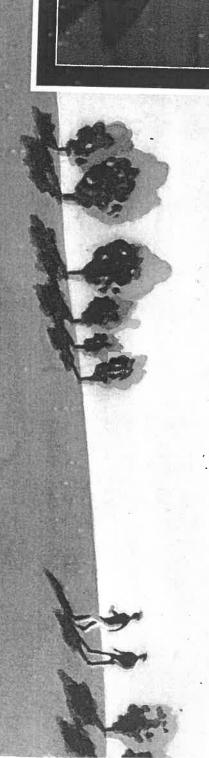
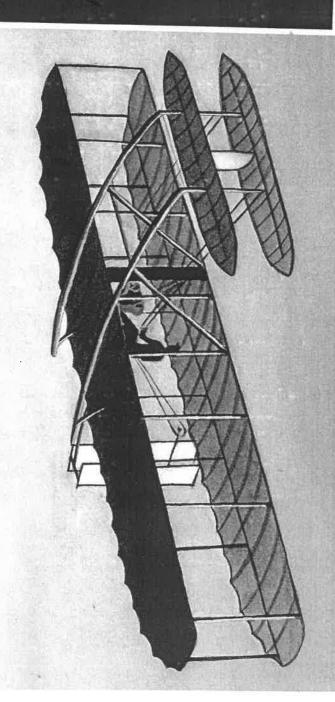
CHEMINERATOR

Eldie Bauer HISTORY OF FLIGHT by William Williams Designed by Dr. Y. Ninomiya

EXCELLENT PAPER AIRPLANES





Eddie Bouer

IISTORY OF FLIGHT

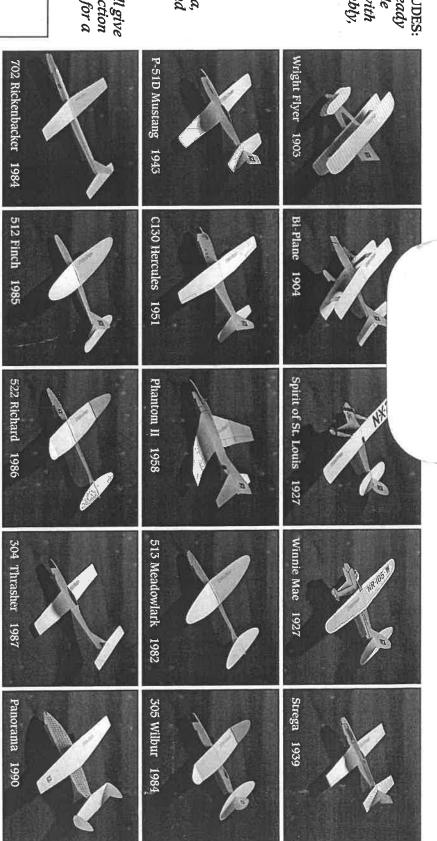
S EXCELLENT PAPER AIRPLANES

ASSEMBLY KIT INCLUDES: 15 paper patterns, ready to cut and assemble Instruction booklet with step by step assembly, flight and design instructions Rubber band Catapult All necessary parts (glue not included)

FLIGHT SAFETY
Remember to launch
planes in a large area,
away from people and
passing cars.

OUR GUARANTEE
Every item we sell will give
you complete satisfaction
or you may return it for a
full refund.

ITEM NO. 22321



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ASSEMBLY INSTRUCTIONS

FLIGHT INSTRUCTIONS

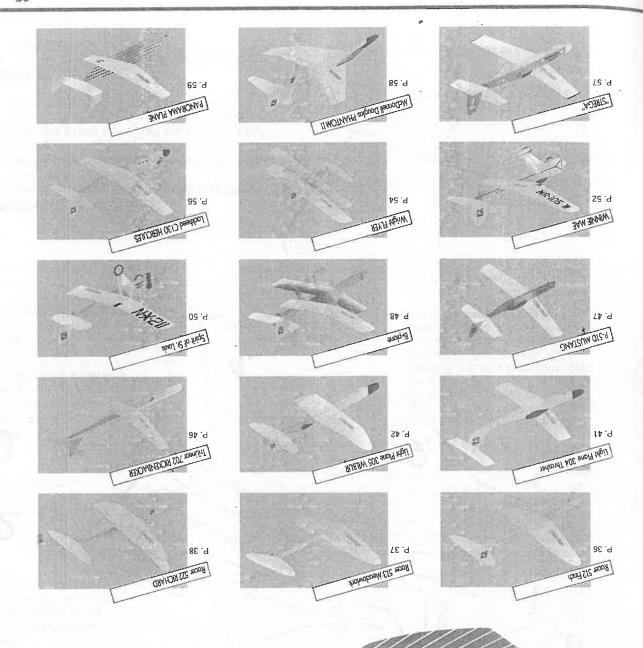
GUIDELINE FOR WHITEWINGS COMPETITION

INTRODUCTION TO PAPER PLANE DESIGN

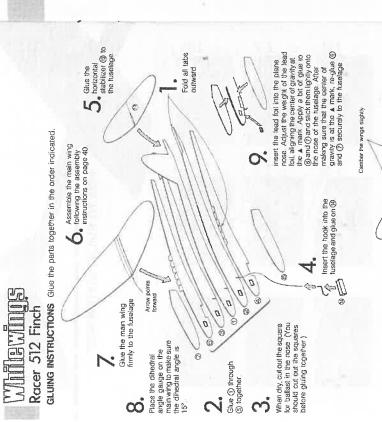
HOM 10 BUILD "WHITEWINGS"



Leddie Bours

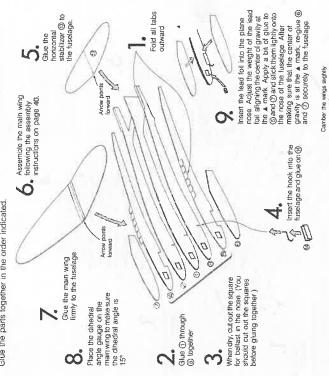


HOW TO BUILD "WHITEWINGS"



Racer 513 Meadowlark

GLUING INSTRUCTIONS
Glue the parts together in the order indicated.



FINISHING TOUCHES

FINISHING TOUCHES

• Give finishing touches to the plane after it dries thoroughly

(I) Camber the main wings carefully with your fingers.

11. View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.

- Give finishing touches to the plane after it is dries thoroughly

 Camber the main wings carefully with your
 - fingers

 11. New the plane from both the front and the back and straighten any warps or bends in the fuselage and wings

TEST FLIGHT

• Test fly the plane according to Test Flight instructions on pages 11 to 13

TEST FLIGHT

• Test fly the plane according to Test Flight instructions on pages 11 to 13.

Glue ① through @ together.

While Wills
Racer 522 RICHARD Glue the parts together in the order indicated

Richard its Bong (1920—1945)
Though his cateer was short-head. Richard soon established himsell as a squadron leader and an ace fiyer during World War II He was awarded the world of Honor for his efforts during hie war and is remembered for his gallentry.

Assemble the middle part of the wing with (9), (9), (9) and (9) following the assembly instructions (2), (1-7) on page 40, starting with step D. The dihedral angle, however, must be 5° Be careful as the part numbers for the man wing are clifferent from those isled on page 40.

Glue the middle part of the main wing firmly to the

Glue the horizontal stabilizer (§) to the fuselage Fold all tabs outward

Arrow points ionward

Place the dihedral angle gauge on the main wing to make sure the dihedral angle is 5°. Dot toward the front Camber the wing tips carefully.

Camber both wing tips (a) and (g) Fold tabs on both ends of the main wing to form a 30° dihedral angle using the gauge and then camber them as well

Apply give to the top surface of the folded tebs of the main wing Attach wing that Sund (a) respectively. Once again, check that the diheoral angle at the tip of the wing is 30°, using the gauge

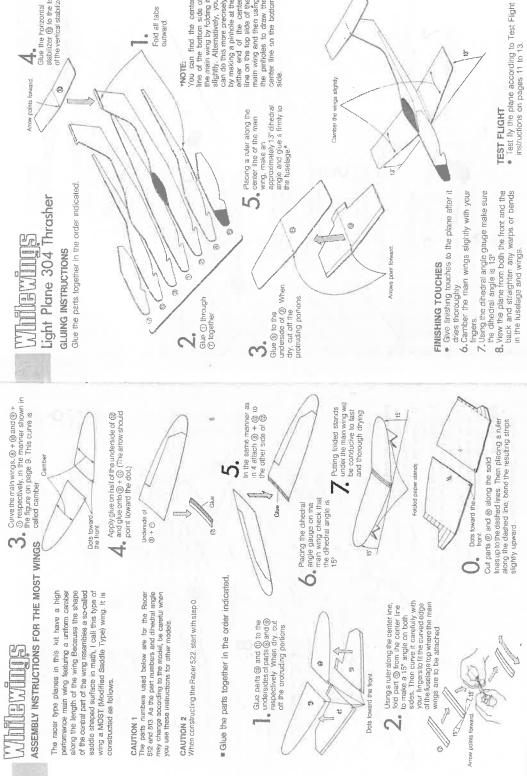
Dot toward the front

10. Using the dihedral angle gauge insure the dihedral angle for the main wing is 5° and for the wing tips 30°.

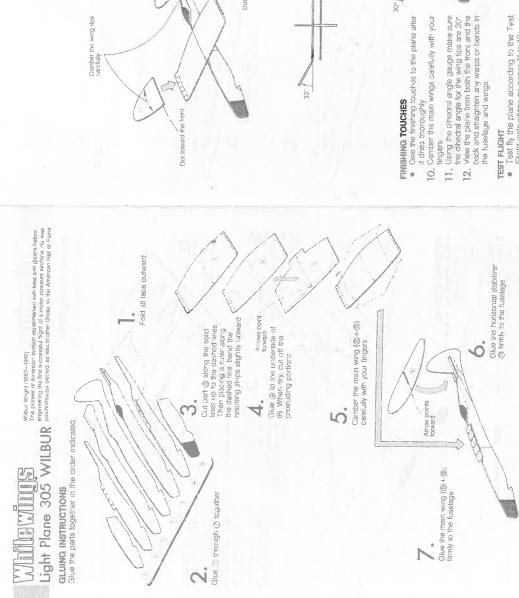
11. View the plane from both the ironi and the back and straighten any warps or bends in the fuselage and the wings. RINISHING TOUCHES
 Give the finishing touches to the plane after it dries thoroughly.
 Camber the main wings carefully with your 30 Camber the wings carefully

300

TEST FLIGHT
■ Test fly the plane according to the Test Flight instructions on pages 11 to 13.



V



Apply glue to the top surface or the foldered table of the main wing and attach wing tips (§) and (§) respectively. Using the dihedral angle gauge, once again, check that the dihedral angle for the wing tips are 30°. Camber both wing tips @ and @ Fold up the tabs on both ends of the wing to form a 30° dihedral angle using the gauge and then camber them as well Camber the wings carefully 00 Dot toward the front Camber the wing tips carefully 30-

- Test flucht
 Test fly the plane according to the Test
 Flight instructions on pages 11 to 13.

43

ASSEMBLY INSTRUCTIONS FOR THE TRIANGULAR LONG FUSELAGE

A truly high performance paper plane is light, sturdy, and has fittle air resistance or drag. This is especially frue of larger paper arriblanes. That is why I have spent some time researching and designing a tuselage that accomodates the body construction of a larger paper airplane. The result of these efforts was the invention of the triangular long fuselage which is resistant to bending and twisting Its aerodynamic performance makes it worthy of the Whitewings'



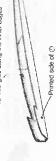
The triangular long fuselage is resistant to both bending and twisting.

Common ordinary Table knife - Puler Make firm creases along the dashed lines

Make firm creases along the dashed lines of fueetage preces (°, & °), using a common ordinary table knie (blunt knie) and a ruler as a guide.

Avoid cutting through the dashed lines





€1 Spread glue evenly over the entire surface of printed side of Ø Apply © to the upprinted side of Ø Apply © to the upprinted side of or Make very sure that fire edges of Ø and ③ that form the plane nose are placed together evenly or flush, as shown in the diagram

Make very sure that the edges of (Cand Care placed together evenly

Spread glue along the inner edges

Glue the inner edges together to complete the formation of the cross section as shown.

Cross section

She/

View the tuselage closely from both the front and back and carefully straighten any warps or bands before the glue dnes. Look made of the tuselage for make sure the inner sides also draw. no warps or bends

Inner sides also draw rio warps or bends.

Let the fuselage dry completely by attaching clips or clothespins on the glued edges as shown it takes at least 2 hours to dry

ARE LECTER

Cross section

Make a groove along the thick dashed the at the plane nose by carefully pressing down upon it with a ruler. The groove must be deeper at the hip of the plane nose than at any other part. The remaining area of the top of the fuselage, except for the thick dashed line, should remain flat.

Put giue into the groove at the tip of the plane notes and both intree sides of the plane nose and glue fogether Left day thoroughty (at least 2 hours) using a clip to keep the tip of the nose in place



Cross section

Completed Figure 6

Before the glue dres, fold (i) and (ii) along the creased dashed lines having (iii) lace inward. Then spread glue along the inner edges as shown.



Glue the parts together in the order indicated

Assemble the fuselage following the assembly instructions for the triangular long fuselage on pages 44 & 45.

Fold (7) along the dashed line at a 90° angle and then cut off the protruding portions

the outer lines of the man wing and bend each side up individually to make a dihedral angle of approximately 15, for both sides of the main wing Place a ruler along each of

Glue the vertical stabilizer ((0+4)) to the gluing position for the vertical stabilizer on the tuselage Make sure to align the folded tab line of the vertical stabilizer with the conter line on the buselage. S

Fold the tab of the vertical stabilizer ® Glue ③ to the other side of the vertical stabilizer ®

Outer lines for the dihedral angle Glue (a) to the underside of (a) When dry, cut off the profruding portions

1

Glue the horizonfal stabilizer ® firmly to the gluing position for the horizontal stabilizer on the fuselage

Arrow points forward Gluing position for the horizontal stabilizer

Arrows point forward

α.

Gluing position for the vertical stabilizer

Glue the man wng (@+(@) firmly to the gluing position for the man wing on the tuselage Make sure to align the center line of the man wng with the center line on the fuselage.

Gluing position for the main wing

FINISHING TOUCHES

Give the finishing touches to the plane after it dries thoroughly

Camber the wings carefully

Camber the main wings carefully with your fingers ٠ ٥

150

10. Using the dihedral angle gauge make sure the dihedral angle for the main wing is 15° 11. View the plane from both the front and the back and snaghten any warps or bends in the fuselage and wings

TEST FLIGHT

Test fly the plane according to the Test Flight instructions on pages 11 to 13

P-5TD MUSTANG GLUING INSTRUCTIONS

Glue the parts together in the order indicated.

Glue (1) to the fuselage.

Fold all tabs outward. 0 1:-) a gluing together.)

Tou choose to extrach peper clips to the plane mose instead of inserting the lead foil, glue ① through ⑦ logether. Glue (1) through (5) together When ary, cut out the square for ballast in the nose. (You may cut out the squares before

Give (9) to the underside of (8) When dry, cut off the protruding portions.

Insert the lead foil into the nose Adjust the weight of the lead foil, aligning the center of 10-15 gravity at the

Camber the wings slightly

A mark Apply a bit of give to (6) and (7) and stock them lightly to the nose. Also inser the hook in the nose.

Insert the hook into the fuse on the fuse of the fuse

Place a ruler along the center file of the main wing (8+%) and make a dihedral anile of approximately 10 - 15". Then glue it framfy to the fuselage. (See NOTE on page 41)

1

n

FINISHING TOUCHES

After making sure that the center of gravity is at the A mark, re-apply @ and © securely to the fuselage.

- it dries thoroughly 9. Camber the main wings carefully with Give finishing touches to the plane after
- Vour fingers

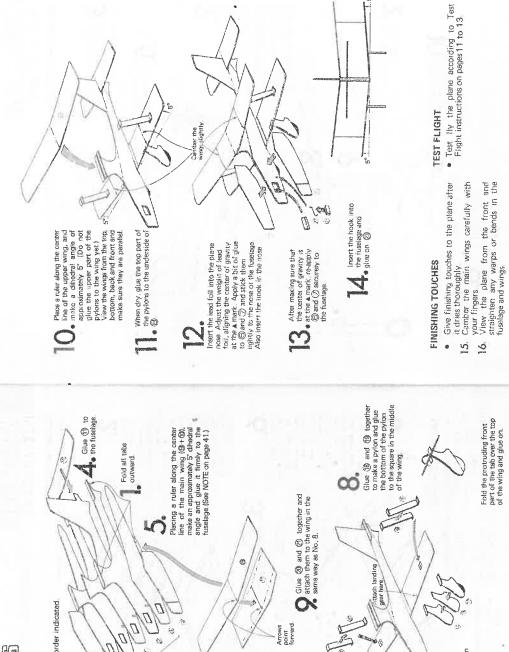
 10. View the plane from the front and straighten any warps or bends in the fuserage and wings.

TEST FLIGHT

Fest fly the plane according to Test Flight instructions on pages 11 to 13.

47





Glue the parts together in the order indicated

Ć,

Glue (1) through (2) to together. When dry, cut out the square for ballast in the nose. (You may cut out the squares before gluing together) if you choose to of trach paper clips to the plane nose instead of inserting the lead foil, glue (1) through (2) together.

Glue (1) to the underside of (2). When dry, cut off the protruding portions.

GLUING INSTRUCTIONS

Bi-plane

Glue (②), (③), and (④) together and attach them • to the underside of the lower main wing, using the fine on the wing as a guide.

V)

(8)

Glue (B), (B), and (D) together and attach them to the lower main wing in the same way as No. 6.

Fold the protruding front part of the tab over the top of the wing and glue on.

Spirit of St. Louis

GLUING INSTRUCTIONS Glue the parts together in the order indicated

Glue (a) to the underside of the main wing (a) When dry, cut off the protruding

Make a 5° dihedraî angle.

Glue both wheels to (1) + (1).

Glue (1) to the fuselage.

Glue (+)
to the fuselage.

Glue (1) through (5) together.

Glue (1) through (5) together.

When dry, cut out the squares

You may cut out the squares

before gluing together.

If you choose to aftach paper

(ibs to the plane nose instead

(in the starting the lead foil, glue

(1) through (2) together.

Fold all tabs outward

Glue (3) + (4) + (5) Fold the protructing from to the main wing using part of the tab over the the time on the wing as guide.

Glue ((() + (()) + (()) to the main wing in the same way as No 8. Attach landing gear here

Give (B), (I), and (B) together

Glue (1) and (2) together and attach to the fuselage.

Glue (3), (4) and (5) together 1 + +@

TEST FLIGHT

• Test fly the plane according to Test Flight instructions on pages 11 to 13.

Camber the wings slightly

insert the hook into the fuselege and glue on (®).

After making sure that the center of gravity is at the mark, re-apply (a) and (b) securely to the fuselage.

Insert the lead foll into the plan nose. Adjust the weight of lead foll, eligining the center of gravity at the & mark. Apply a bit of glue to @ and Q and "stick, the mightly onto the ross of the fuselage. Also insert the hook in the nose.

• Give finishing touches to the plane after it dries thoroughly.

16. Camber the main wings carefully with

your fingers.
17. View the plane from the front and straighten any warps or bends in the fuselage and wings.

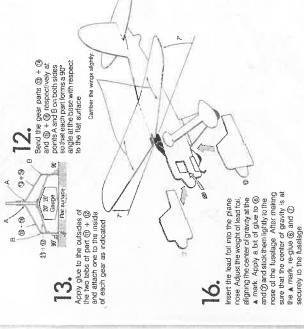
FINISHING TOUCHES

(Lockheed VEGA) WINDEWINGS "WINNE MAE" (L

horizontal stabilizer parf (0) to the fuselage Glue left gear parts (3) and (3) together and bend the assembled piece into the shape shown Assemble and place the right gear using parts (§) and (§) in the same manner as (§) and (§) Attach the top part of the gear (3 + (4) to the C) mark on the body Glue the Place a ruler along the center line of the man wing (@+(@) and make an approximately 7 dihedral angle. Then glue it firmly to the Give the parts together in the order indicated: Fold all tabs outward Glue (0) + (0) to the tab at the bottom of the uselage 9 0 Insert the hook into the fuselage and glue on (()) 100 Jens Give parts (Band (B) together with (B) on top Then bend the assembled piece along the center line as shown GLUING INSTRUCTIONS Arrows point forward. When dry, cut out the square for ballast in the nose. (You should cut out the squares before gluing together.) Glue (9) to the underside of (8) When ary, cut off the protruding portions. 7 Glue (i) through (ii) together.

which made many new records in the early 1930's. The plane's owner, an oil dealer in Oklahome, named it after his daughter. Winnie Mae became well-kritown because the pilot, willey Post, achieved the World's record for fastlest flight around the world, both in 1931 and 1933. "WINNIE MAE" is one of the Lockheed VEGAs

Apply the angle gauge to the bottom of part (i)



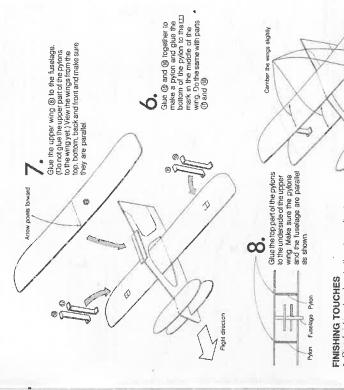
FINISHING TOUCHES

· Give finishing touches to the plane after it dnes thoroughly 17. Camber the main wing slightly with your fingers

18. Using the dihedral angle gauge make sure the dihedral angle is 7°. By two with the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.

TEST FLIGHT

• Test fly the plane according to Test Flight instructions on pages 11 to 13.



- Give finishing touches to the plane after it dries thoroughly
 9. Carriber the main wing slightly with your
- ingers

 10. The ordered angle is not needed

 11. When you fit this FLYER outdoors, attach
 one or two of the included paper clips on
 the plane mose Marks sure the center of
 gravity is at & mark When you fit in indoors,
 it's befet to attach no clips to have floating
- and longer flights
 12 View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.

S

Lockheed C130 HERCULES GLUING INSTRUCTIONS

Glue the parts together in the order indicated.

Glue (a) to the underside of (a). When dry, cut off the protruding portions.

Turn the horizontal stabilizer (a) upside down and glue (a) to the fuselage aligning the center line on (b) with the center of the Arrows point forward.

Place a ruler along the center line of the main wing ((® + @) and make a chiedral angle of approximately 7*. Then glue it firmly to the fuselage

Fold all tabs outward.

Glue (1) through (3) together

FINISHING TOUCHES

Camber the wings carefully,

- 6. Camber the main wings carefully with your Give the finishing touches to the plane after it dries thoroughly
- in 1977. Using the dihedral angle gauge make sure the dihedral angle for the main wing is 7°. 8. Fold (on 9 sightly along the center fine and give it onto the center of the main wing 9. View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.

TEST FUGHT

Test fly the plane according to the Test Flight instructions on pages 11 to 13

"STREGA" (Modified P-51 MUSTANG)

Each year, in September, the city of Reno holds a National Championship Air Race. (Reno is in the Nergas Desett Book 220 miles northeast from San Francisco, The Strega achieved a may race record with an average speed of 454 mph, in the Reno Air Race in 1987, The

models, including modified battle planes with great horsepower such as the Mustang, Bearcat. Oorself, and Sea-Fury, that were at work during World Wart II. The Strega, meaning "witch" in Italian, is a remodeled Mustang P-51. unlimited class is comprised of many racing

Glue the parts together in the order indicated.

GLUING INSTRUCTIONS

Arrow points forward.

Fold all tabs outward.

Give (ii) to the underside of (iii). When dry, cut off the protruding portions.

Arrows point forward. Place a ruler along the center line of the man wing (@+(ii) and make a dihedral angle of approximately 12". Then approximately 12". Then fuselage, (See NOTE on page 41.)

Glue in through a together.



FINISHING TOUCHES

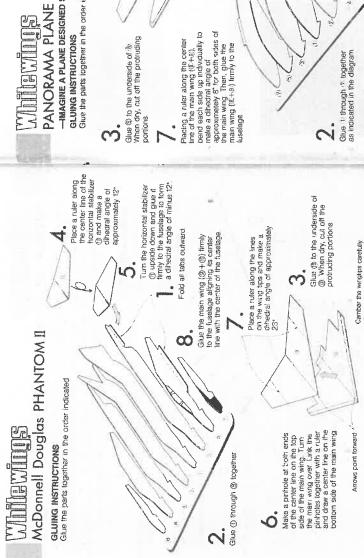
- Give the finishing touches to the plane after Winductor the spirit in
- 7. Using the dinedral angle gauge make sure the chhedral angle for the main wing is 12?. 8. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings.

TEST FLICHT

Test fly the pians according to the Test Flight instructions on pages 11 to 13.

- Camber the main wings carefully with your fingers

6



-- MAGINE A PLANE DESIGNED SO THAT EVERYONE CAN HAVE A WINDOW SEAT-

GLUING INSTRUCTIONS Give the parts together in the order indicated

Glue the tail section (ID+09+09) firmly to the fuselage

Give the vertical stabilizers in and it to the tabs of the horizontal stabilizer it aligning the arrows on it and it with the folded tab lines of it.

Fold both tabs of the horizontal stabilizer (I) as

Arrow points foward

Arrow points foward.

FINISHING TOUCHES

Give the finishing touches to the plane after it dnes thoroughly

Fold all tabs outward.

 Using the dihedral angle gauge, make sure the dihedral angle of the main 8. Camber the main wing slightly with your lingers.

it dries thoroughly.

9. Camber the wingtips carefully with your

fingers

Give the finishing touches to the plane after

FINISHING TOUCHES

10. Using the dihedral angle gauge make sure the dihedral angle for the wing tips are 23 and for the horizontal steablizer minus f2-11. View the plane from both the front and the back and straighten any warps or bends in

the fuselage and wings.

TEST FLIGHT

Camber the w

wing is 8" wing is 8" record and a second as center line and glue it onto the center of the man wing 11". View the plane from both the front and 11".

the back and straighten any warps or bends in the fuselage and the wings.

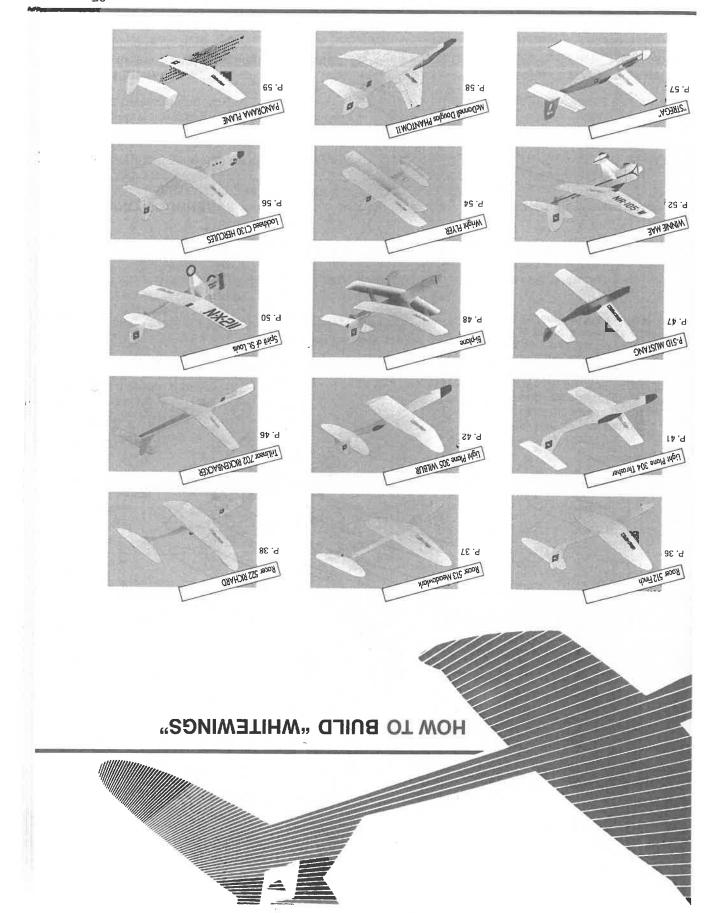
TEST FLIGHT

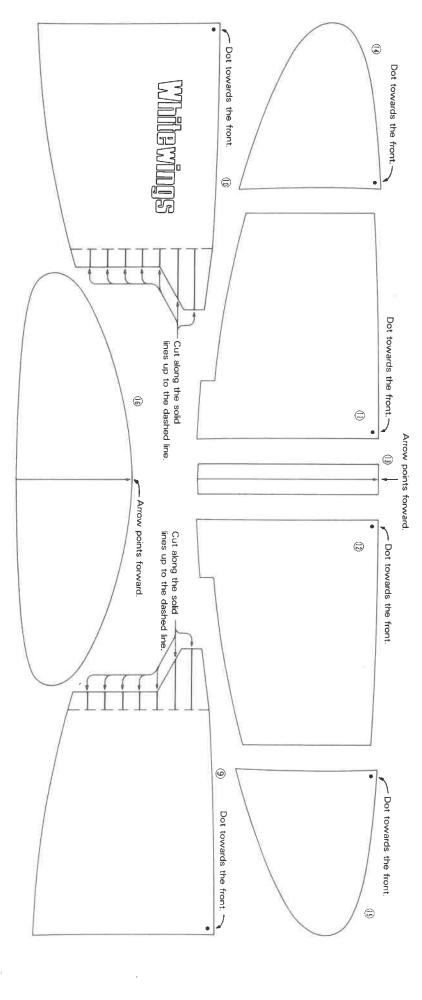
◆ Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to f3.

20

Arrow points foward

Test fly the plane according to the Test Flight instructions on pages 11 to 13.



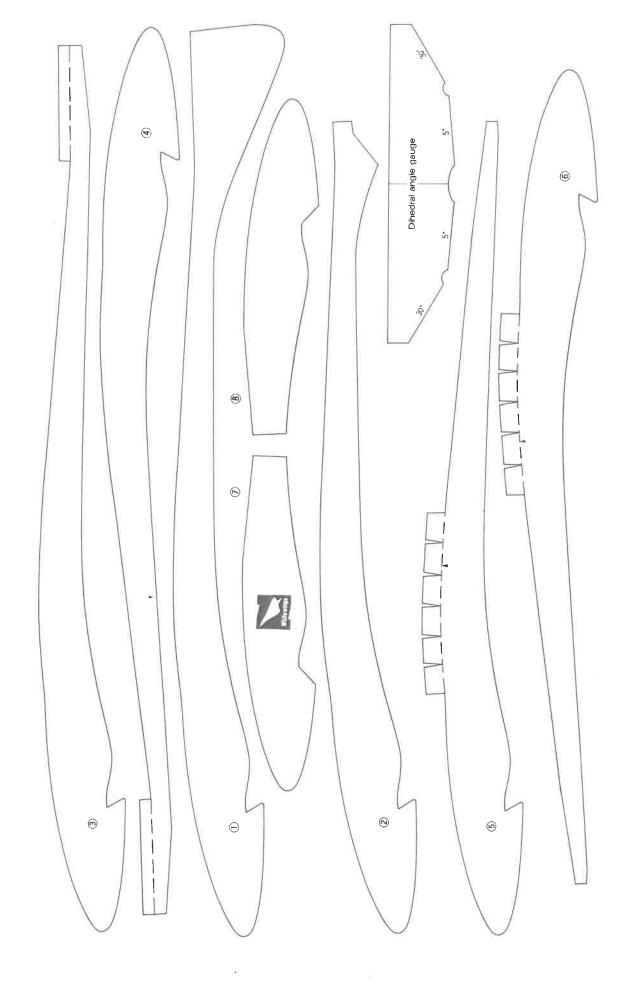


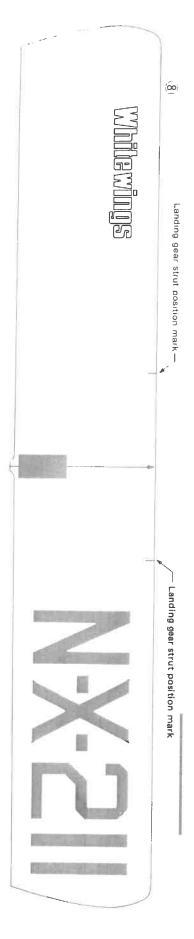


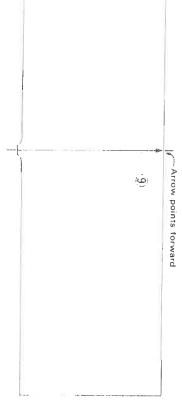
Fold with dashed line inside.
 Arrows point forward.

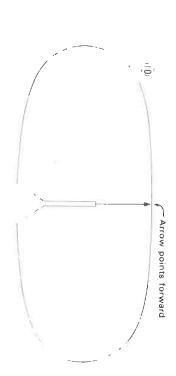


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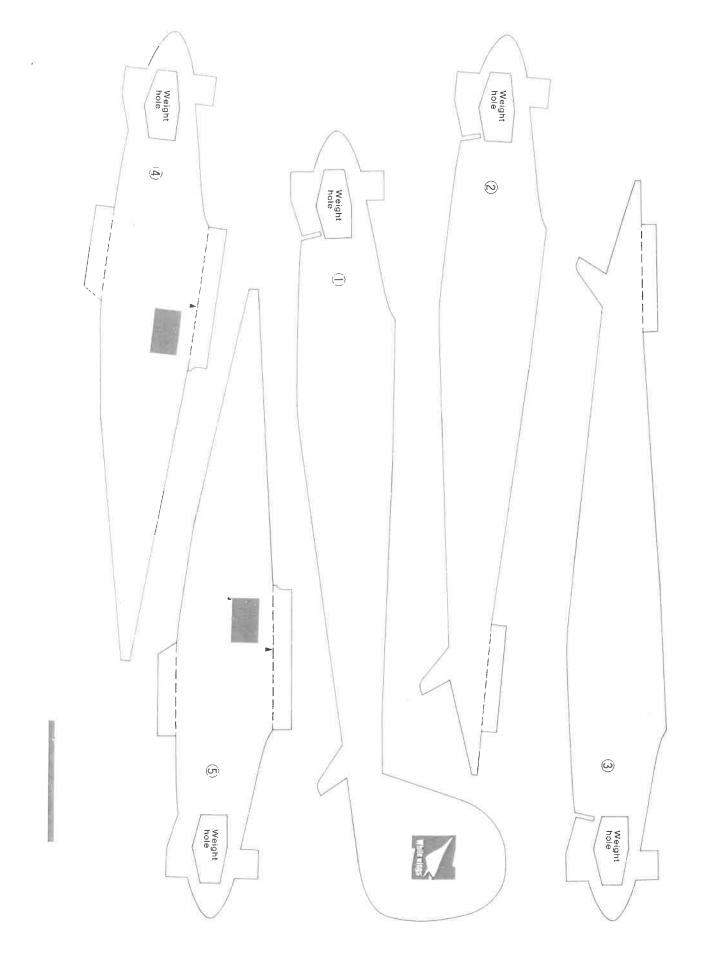


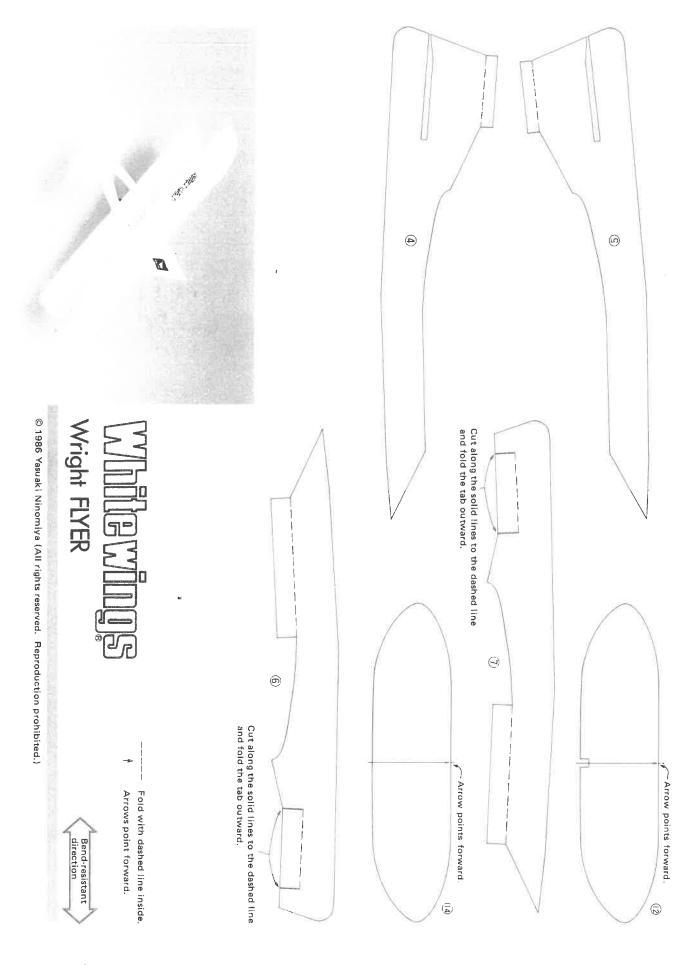
Spirit of St. Louis

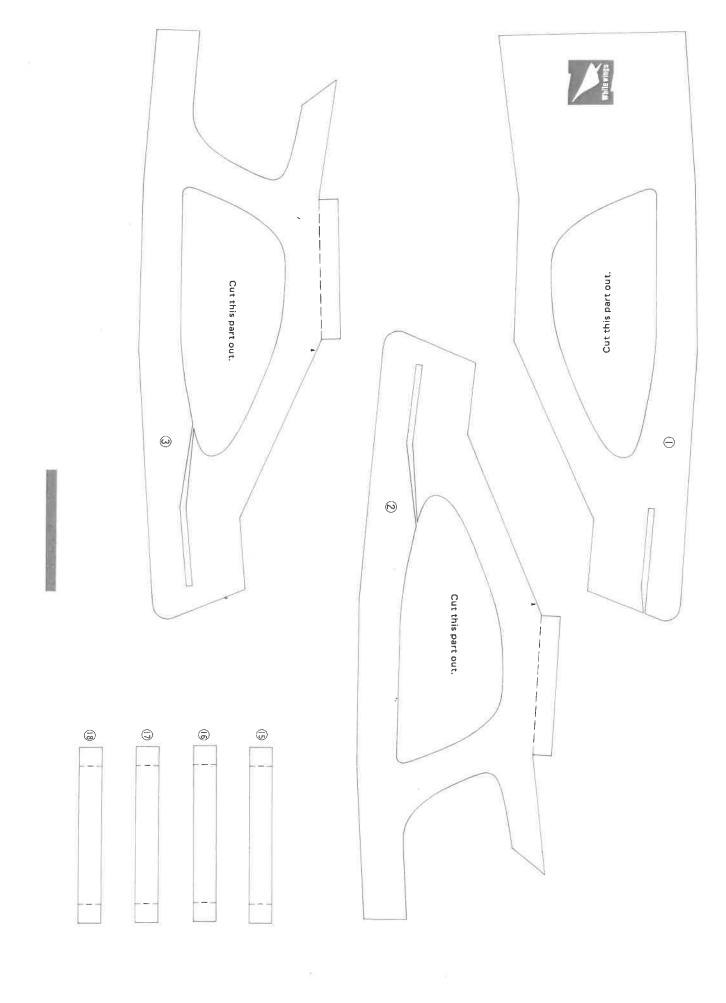
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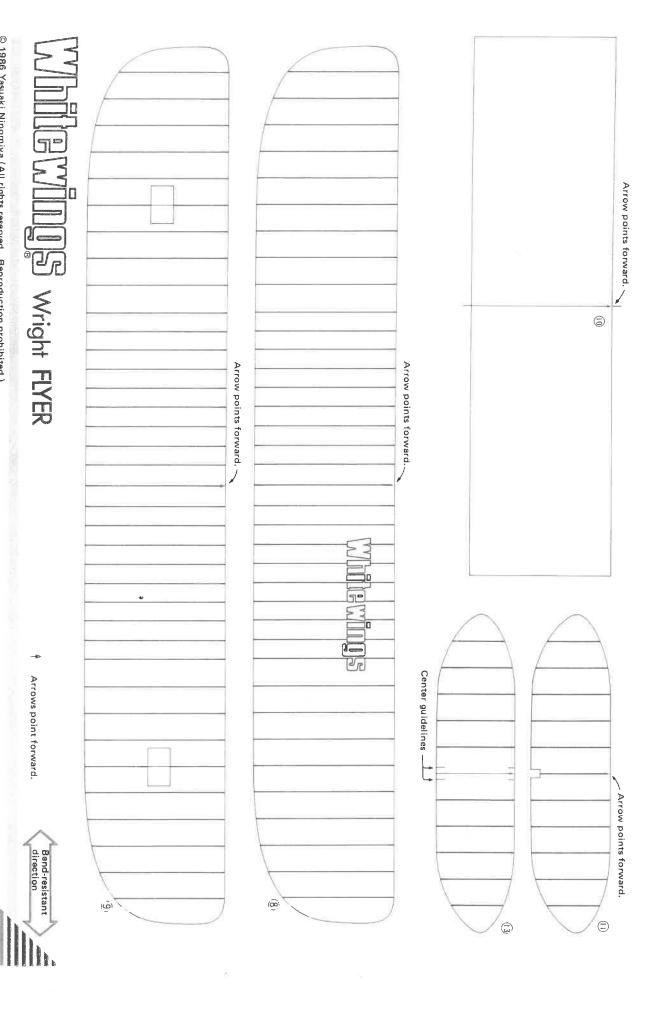
- Ford with dashed line inside.
Arrows point forward

Bend-resistant direction

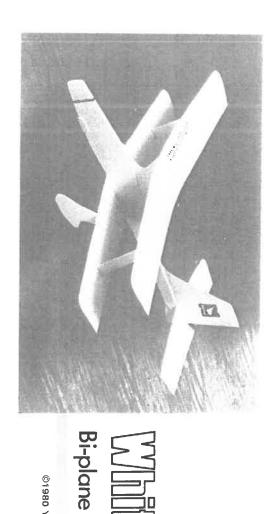


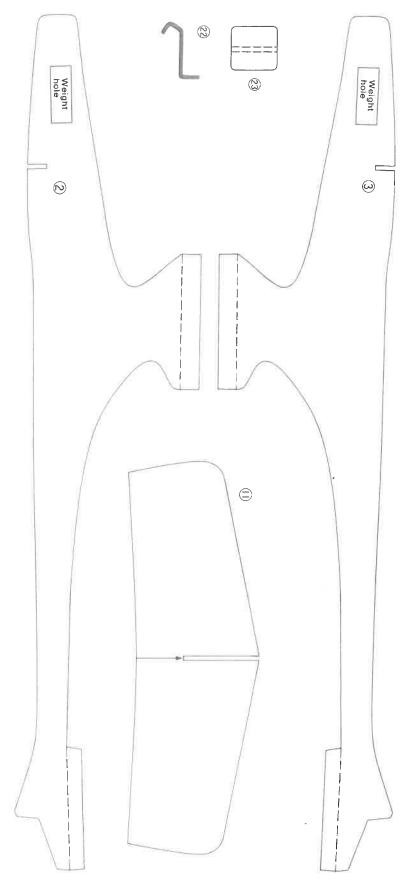






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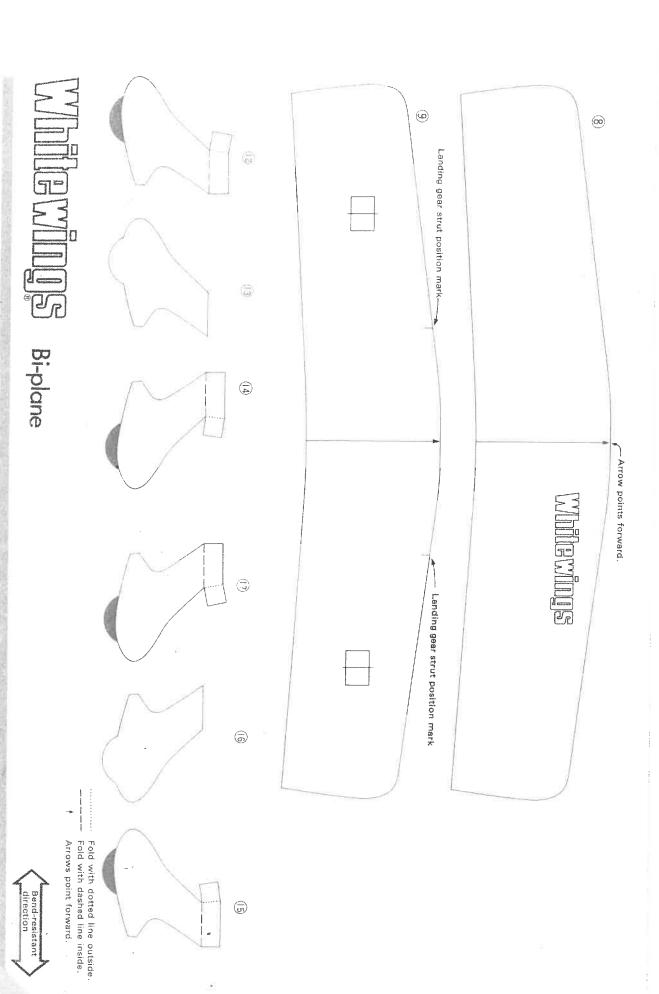


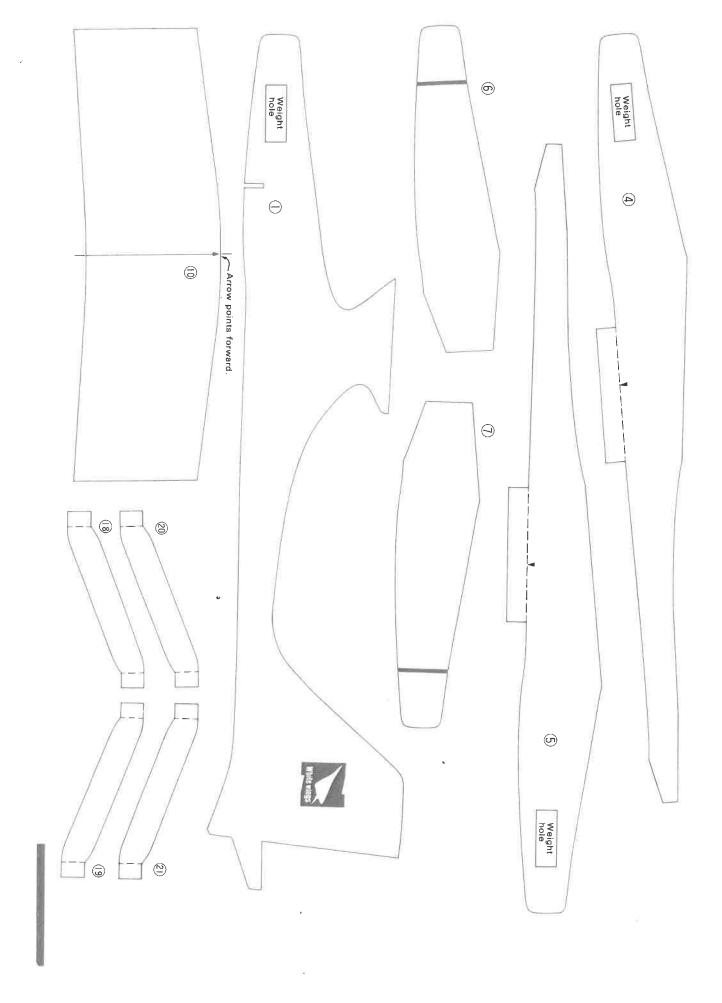
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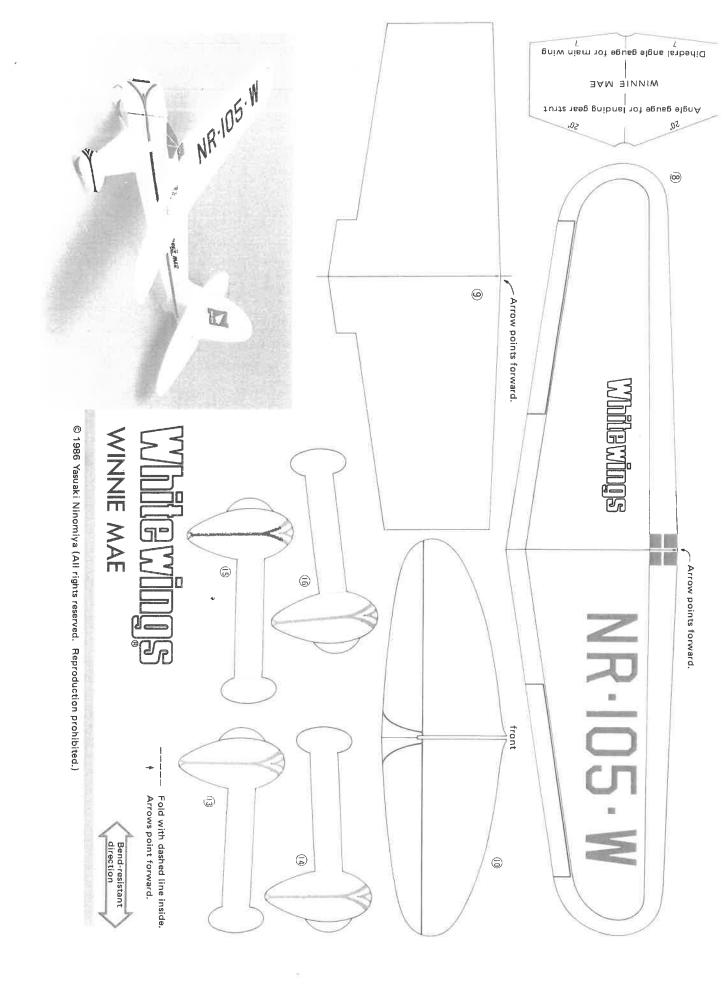
Arrows point forward.

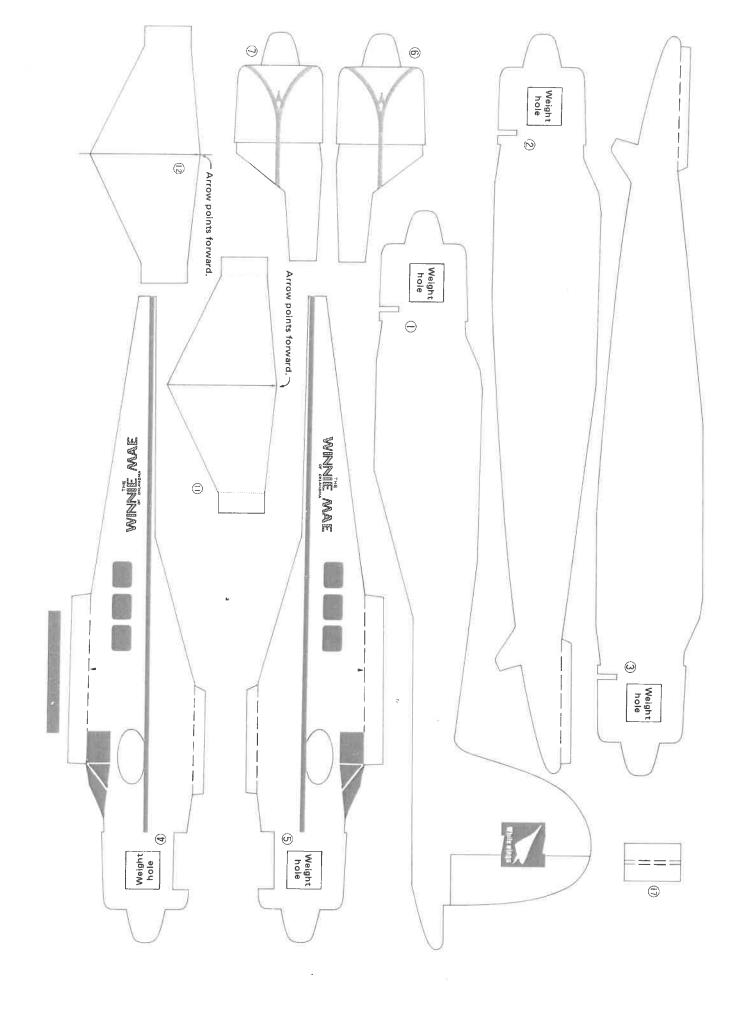


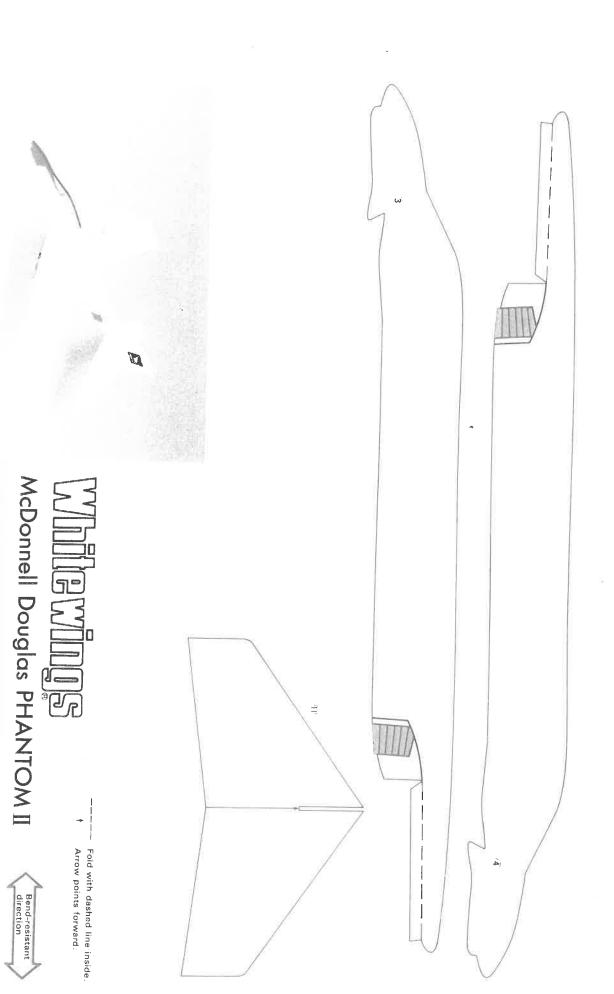
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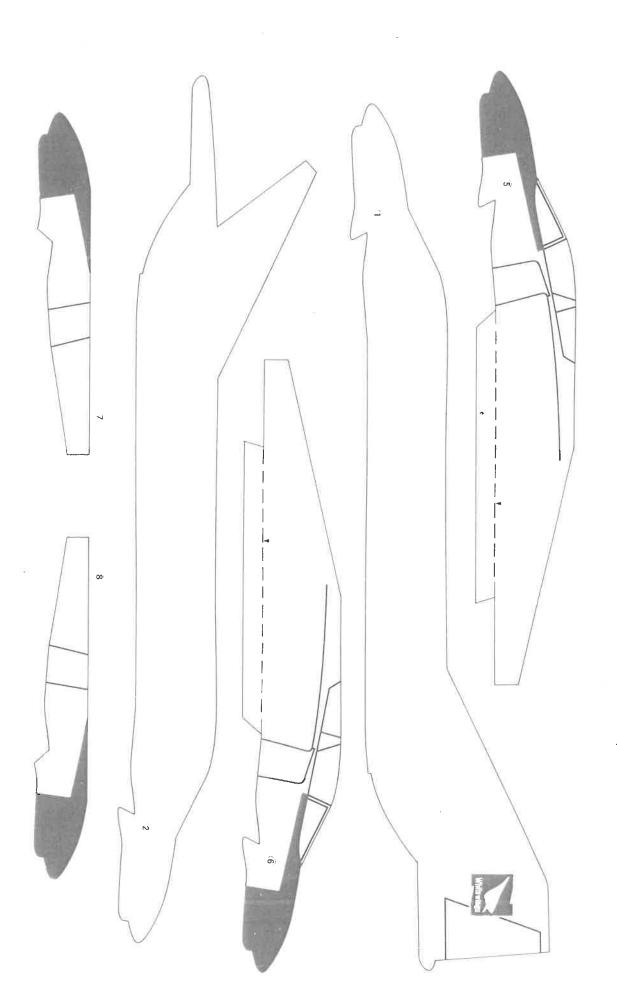


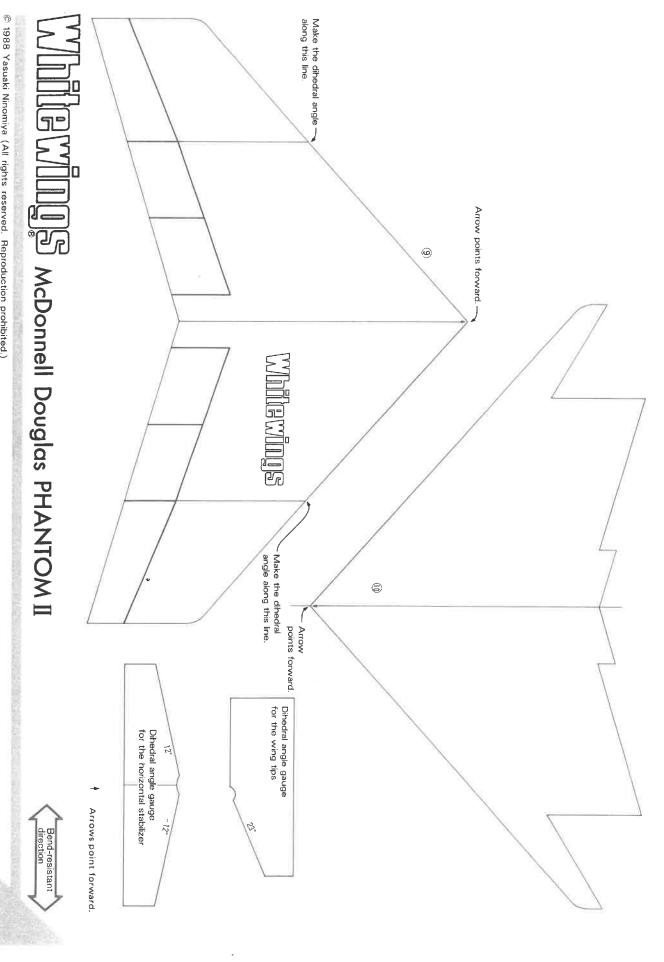




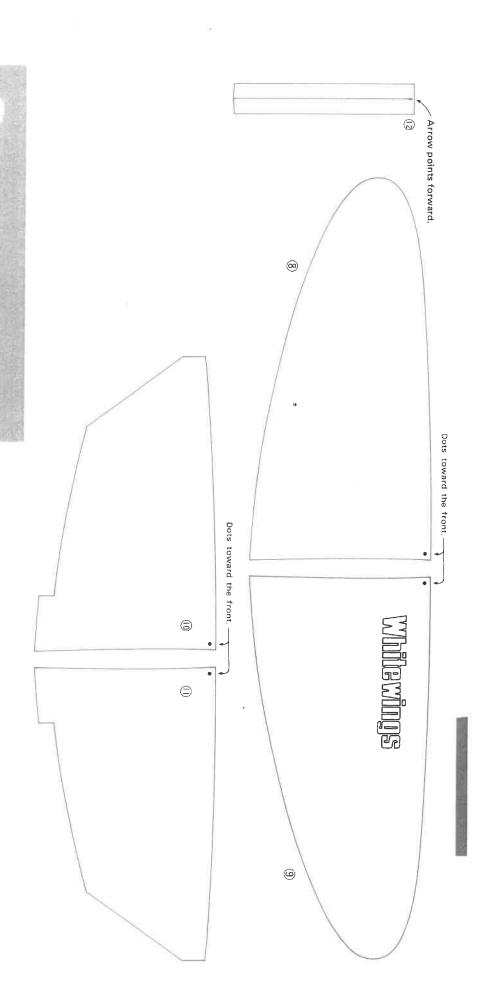


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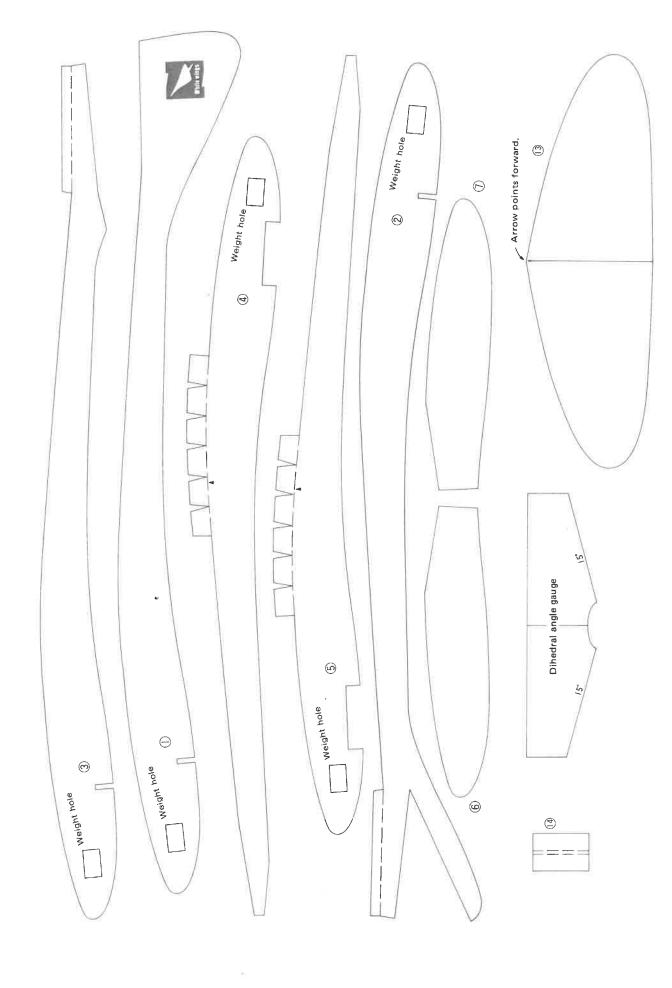


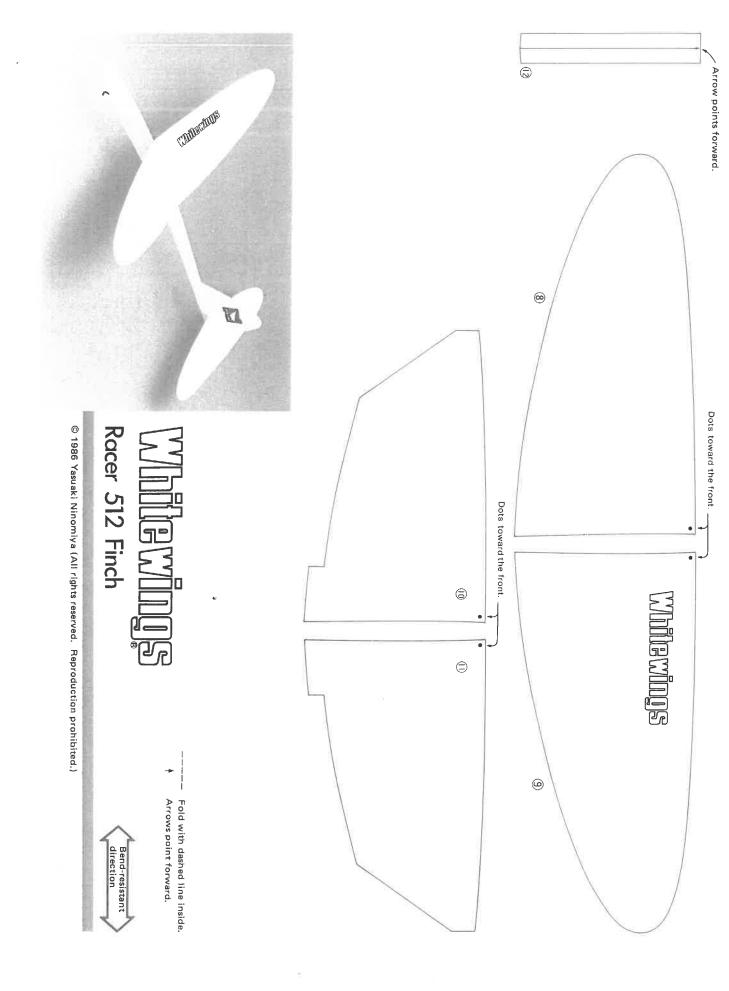


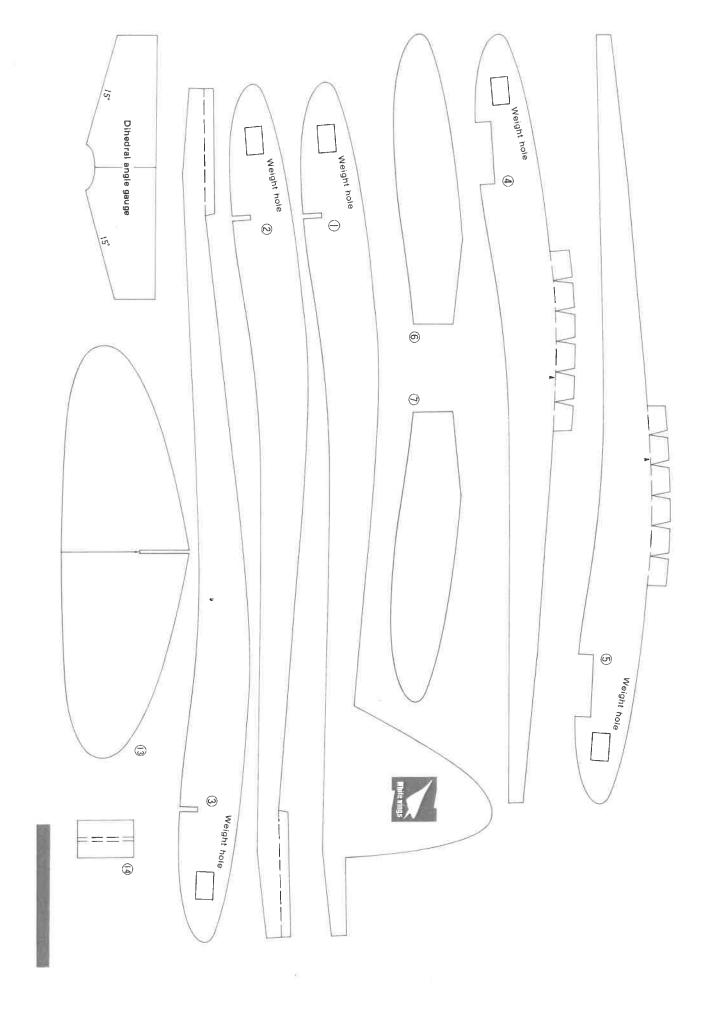
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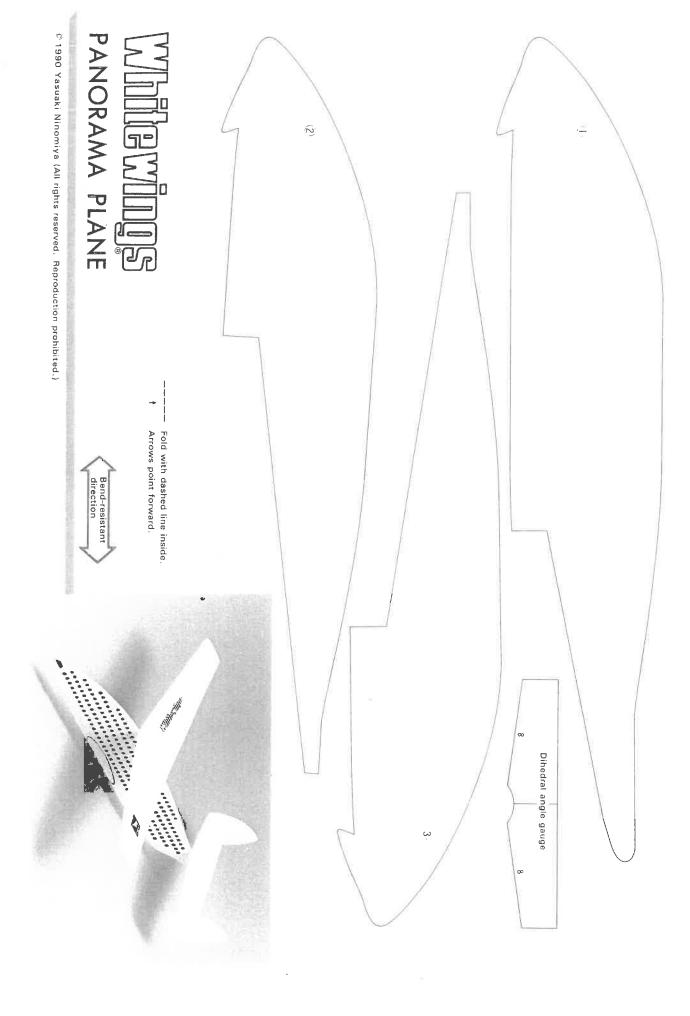
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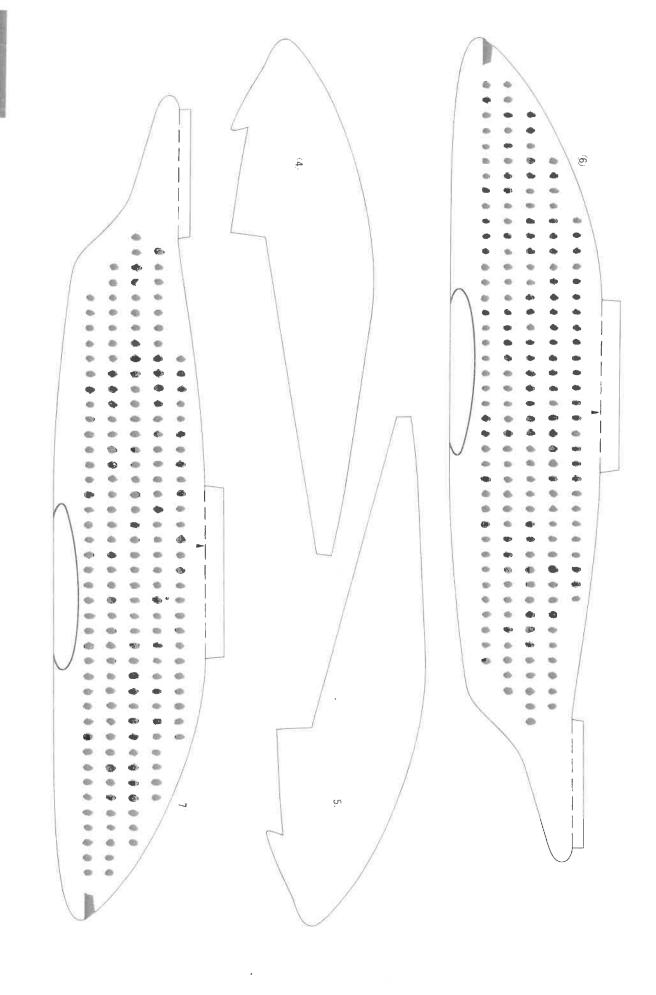


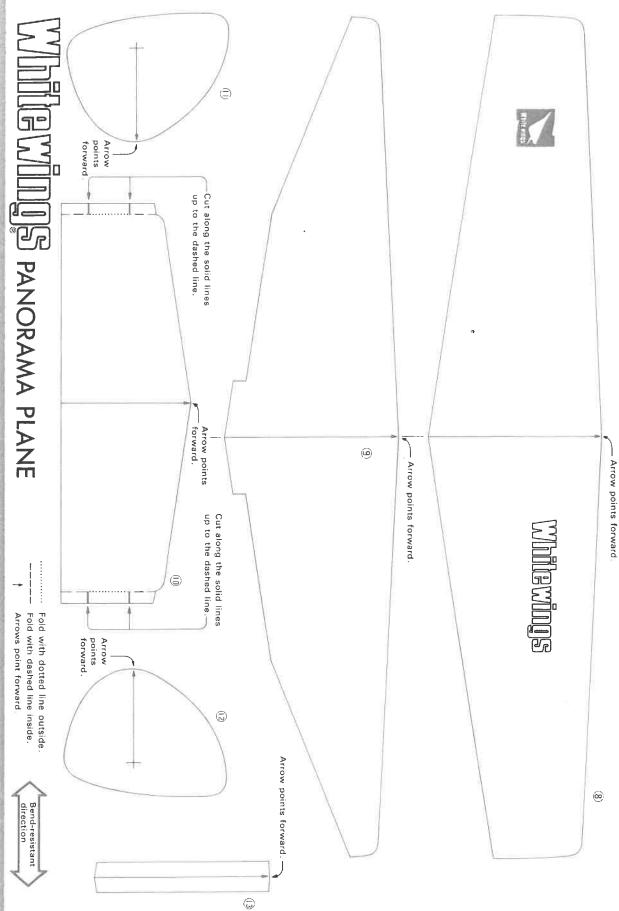




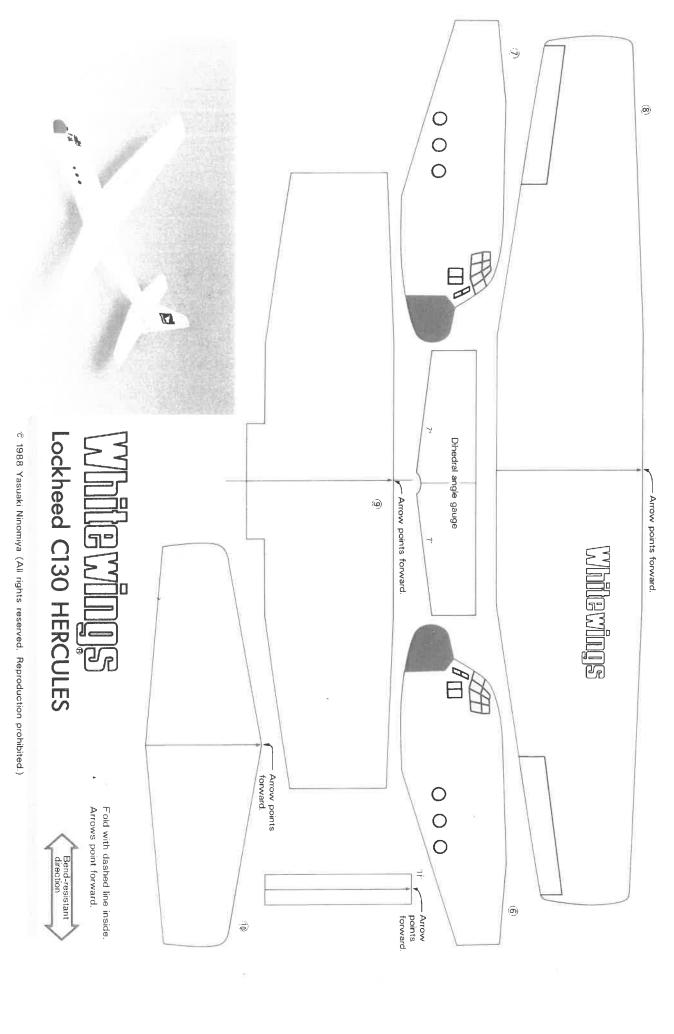


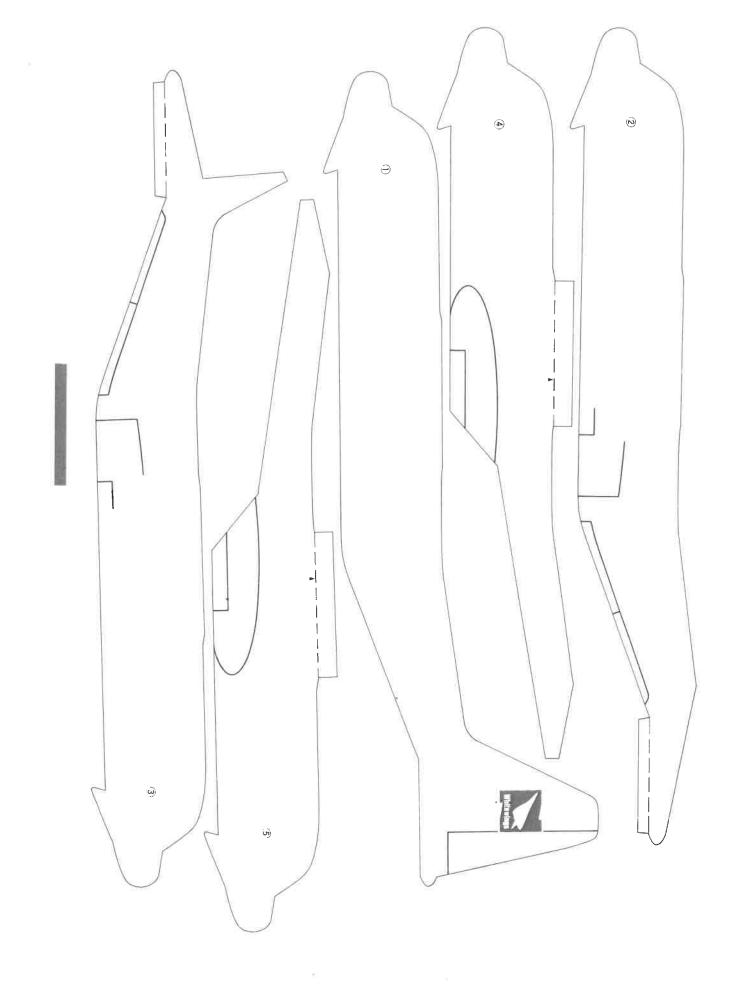


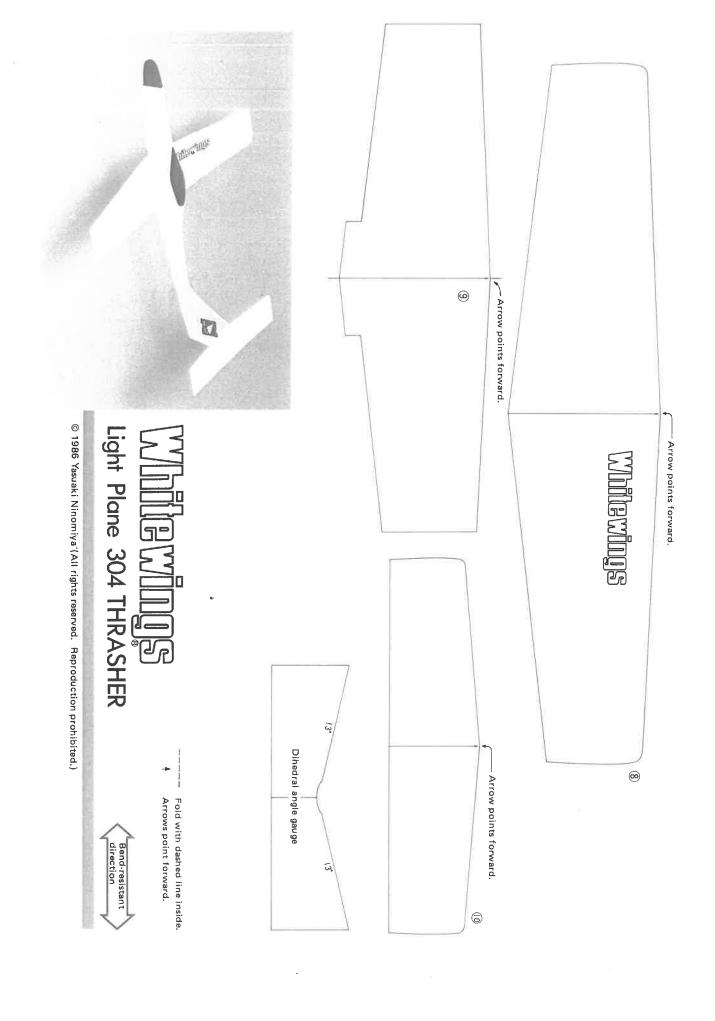


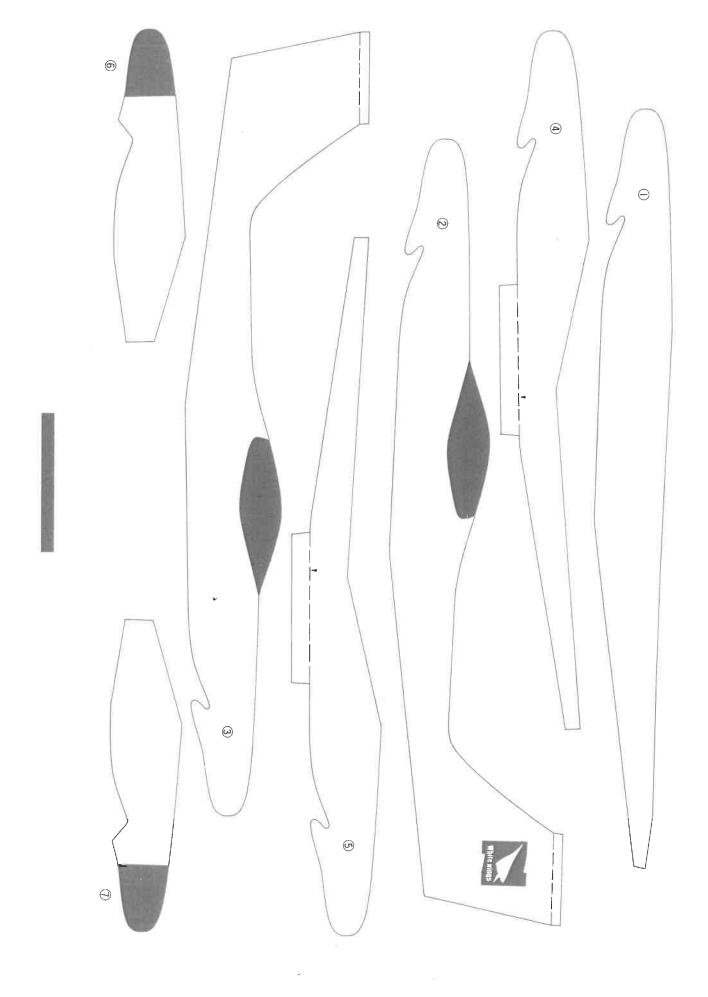


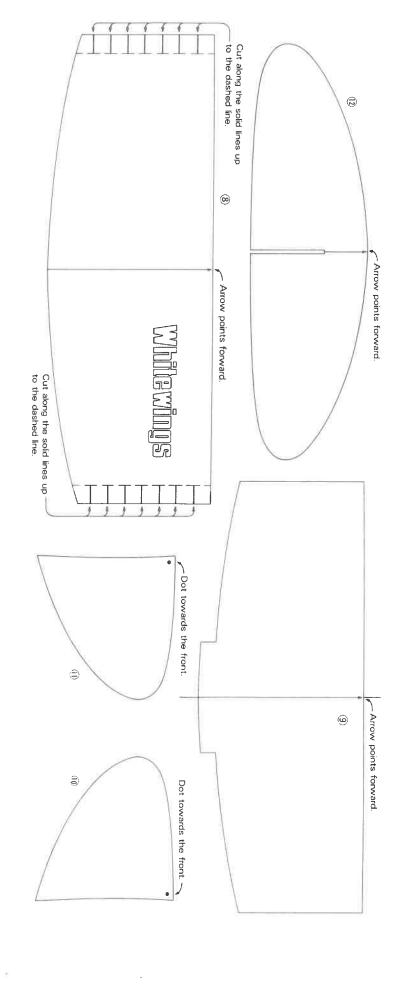










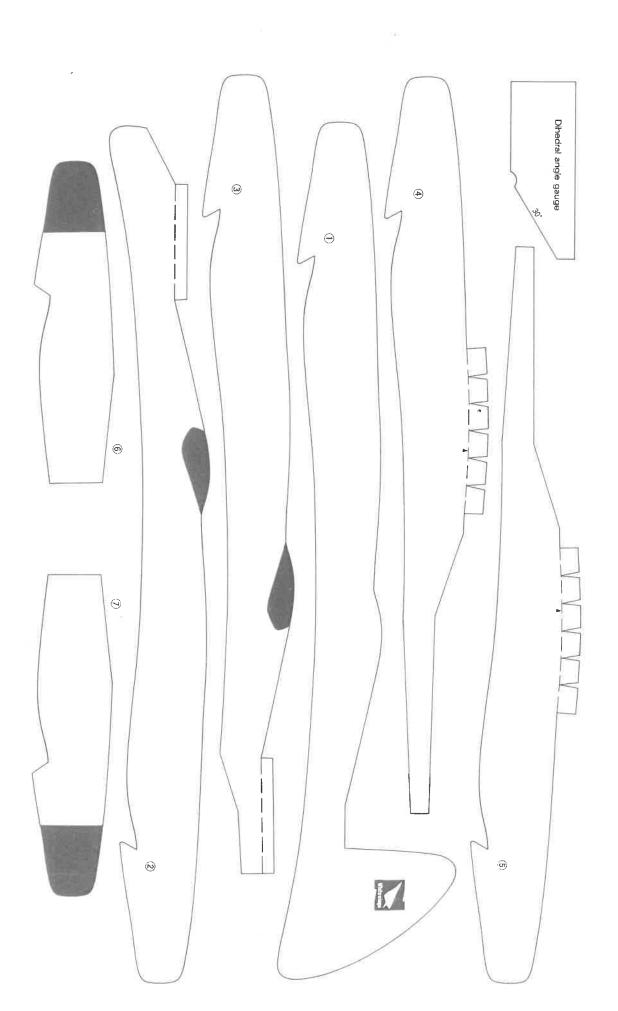




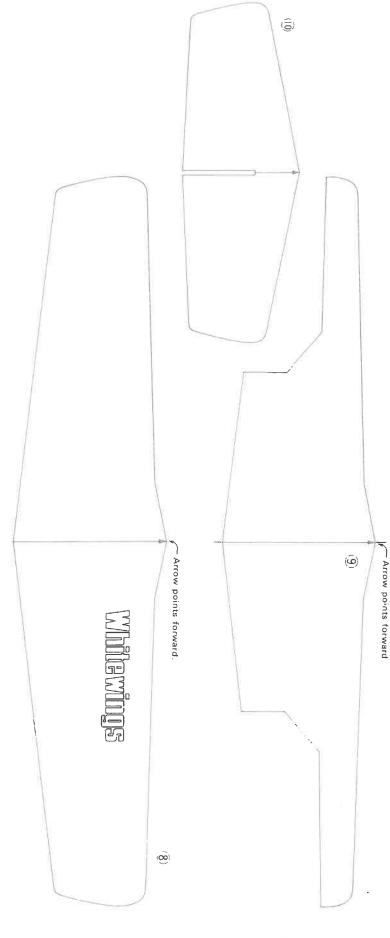
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